

A
TREATISE
ON
HERNIA HUMORALIS ;
OR,
SWELLED TESTICLE.

—•••••—
TO WHICH ARE ADDED,

REMARKS

ON
OPACITY OF THE CORNEA,
ELUCIDATED BY CASES.

—•••••—
BY THOMAS LUXMOORE,

—
Member of the Royal College of Surgeons; Surgeon Extraordinary to His Royal Highness the Prince of Wales; Surgeon to the Eastern Dispensary; and to the Honorable Artillery Company.

—•••••—
London :

PUBLISHED AND SOLD FOR THE AUTHOR,
By S. HIGHLEY, Fleet Street.

—•••••—
1806.

Printed by W. Glendinning, 25, Hatton Garden.

DEDICATION.




TO

JOHN HAIGHTON, M. D.

PHYSICIAN TO THE EASTERN DISPENSARY,

AND

LECTURER ON PHYSIOLOGY AT GUY'S HOSPITAL,
&c. &c. &c.



DEAR SIR,

I have presumed to
dedicate the following Pages
to you, feeling it a Duty to
acknowledge your friendly
Attentions to me since I have

DEDICATION.

had the Honor of being your
Colleague at the Eastern Dis-
pensary ; allow me this Op-
portunity of returning you my
Thanks for your Kindness in
complying with my Request
in inspecting several of the
annexed Cases of Opacity
of the Cornea whilst under
Cure.

I am, dear Sir,

With the utmost Esteem,

Your obedient Servant

THOMAS LUXMOORE.

St. Mary Axe,

May 1, 1806.

P R E F A C E.



ONE great step towards the improvement of any science is its simplification ; whenever its doctrines are clear, and its phenomena can be explained upon comprehensible grounds, then we may pronounce it to have attained its greatest perfection. There are however scarcely any scientific researches that have hitherto obtained more than partial elucidation, for in astronomy, chemistry, medicine, and several others, many explanations admit of doubt, and many subjects have not yet been explained at all.

The following pages are written with a view principally to elucidate a subject

of medical enquiry. It is admitted that many authors have already treated on the subject of *Hernia Humoralis*, whose remarks leave very little to be desired; but yet they have adopted various and erroneous opinions in general, which may lead the inexperienced astray, and tend to confound rather than to inform.

The examination of these several opinions, and of the reasons for adopting them, has not been undertaken, and although the greater number of practitioners of the present day are aware of their being erroneous, yet no detail of the arguments that prove them so has ever been brought before the public.

To disengage the pathology of *hernia humoralis* from that embarrassment in which variety of opinion has involved it, is the chief object of the present production; whoever opens it with the idea of meeting something unknown before will probably be mistaken, but the author flatters himself, that he who peruses it

acquire a clear comprehension of the disease will not be disappointed.

With respect to the treatment of the complaint here recommended, it certainly differs in a few essential points from that advanced by most writers on the subject; but these variations are not of so much importance, as the endeavour to explain the principles upon which the medicines act, and the indications by which they are directed; for, possessed of this knowledge, the young practitioner need seldom dread encountering a disease, however uncommon and anomalous in appearance it may assume.

The practice that is advised being at the same time the result of long experienced success, and of the trial of those plans which have severally been recommended, no fallacious consequences can be drawn from it: the theories advanced, as founded upon the practice, are by no means liable to the objections which apply to the hypothesis formed in the clo-

set, and which is to constitute the basis of a plan of treatment, instead of being deduced from the success of such a plan previously and repeatedly tried.

The author has not thought it necessary to detail any cases of this complaint as they are to be met with in daily practice, and differ in so slight a degree from one another.

The cases of opacity of the cornea are affixed to the end of the volume, and a few of several striking instances of success with which the practice recommended has been rewarded, and facts of so important a nature, as to establish the means of restoring vision to the blind under peculiar circumstances, can require no apology for their publication; at the same time as they are intended to present simple details of truth, but few remarks are offered on the subject of opacity, except those only which were indispensably necessary for the better comprehension of the plan of treatment suggested in the subsequent pages.

With the hope only, that this small
 volume may add a trifle to the store of
 logical information, the author sends it
 to the world, having nothing to dread
 in its being found undeserving, and
 nothing to expect from its success, but
 the satisfaction of knowing that the
 use of his leisure hours has been of
 some service to his fellow creatures,

CONTENTS.

Dedication	1
Preface	
Anatomy of the Testicles	
Of the Nature of Swelled Testicle	
Of the Causes of Swelled Testicle	
Of the Symptoms and Consequences of Swel-	
led Testicle	
Of the Treatment	
Opacity of the Cornea	
Case 1 to 8	

ERRATA.

Page 9 line 20 *for* serious *read* serous.

11 15 *for* testis *read* testes.

24 6 *for* discharged, they con
read discharge, they conce.

27 2 *for* frequently *read* unfreq

A

TREATISE

ON

HERNIA HUMORALIS.

CHAP. I.

REASON as well as experience has long pointed out the necessity of attending to the natural or healthy structure and functions of those organs which compose the animal machine, before any judicious inference can be drawn, with respect to the morbid conditions to which they are occasionally subject, or to the mode of treatment which is adapted most peculiarly for their relief. It is upon anatomy and physiology that the rational practitioner relies when he encounters dis-

B

ease: they are the chief steps which conduct him to success; and a practice of which they do not constitute the basis must pretend to no better title than empiricism.

The necessity of anatomical knowledge is no where more apparent than in the treatment of those diseases which affect the testis; for as much obscurity often prevails as to the nature of the affections of them, and of the parts in their vicinity, which require to be accurately distinguished from each other, it will be obvious to every one, however little conversant with medical facts, that the consequences of a mistake made in the treatment of such complaints must be of the most serious nature. It will not, therefore be considered as ill-timed or injudicious, if, previous to discussing the professed subject of these pages, we should premise a few observations which relate to the anatomy of the testes; and though perhaps a more satisfactory description of them may be met with

the several valuable anatomical works, of which the public are in possession, still these remarks will prevent, in a great degree, that abstraction of attention which a reference to them would require, and be more immediately applicable to the remainder of the book.

The testes, those organs which perform the secretion of the seminal fluid in the male, are two in number, and were thence also named by the older anatomists Didymi, Gemini, &c. They are situated within certain coverings, in a pendulous bag at the inferior part of the abdominal parietes, which bag is termed the scrotum. In some animals, as in the hedgehog, they are placed in the abdomen. In the human foetus also they are situated within that cavity; and instances have occurred, where, instead of descending into the scrotum at the usual time before birth, they have remained in their original station till a much later period; sometimes

this is the case with one, and sometimes with both testicles, and it has happened that neither have descended through life.

The scrotum is composed of the common integuments and of cellular membrane. The skin here sometimes becomes contracted, and then a number of rugæ or folds are observable externally, which were formerly attributed to the presence of a cutaneous muscle, named the dartos. The presence of a muscle was farther thought probable, from the red appearance of the inner part of the scrotum; this, however, is now known to depend upon the vascularity of the part, and therefore the existence of a muscle is generally denied. As the scrotum contracts, it also is sometimes relaxed, and this occasionally takes place to so great an extent, as to require artificial support. The skin is supplied with sebaceous glands, and covered partially, by hairs. The cellular membrane of the scrotum is

thin and delicate, and never contains any adipose substance. Externally the scrotum is divided by a line, continued from the penis and passing on to the perinæum, termed raphe, and this division is continued internally by a condensation of the cellular membrane in the centre, by which the scrotum is divided into two bags, one for the reception of each testicle; this separation is not however complete, for air or fluid will pass from one side of the scrotum to the other. The skin and cellular membrane of the scrotum are continued from those covering the abdomen and penis, and the cellular membrane forms above a ligamentous substance, which is attached to the ramus of the ischium, and to the inferior part of the urethra. The scrotum derives its vessels from those supplying the parts in its vicinity; its arteries come from the pudendal and femoral arteries, and its veins empty themselves into the corresponding veins; the lymphatics go chiefly to the

inguinal glands, and its anterior nerves proceed from the lumbar, and its posterior ones from the sciatic. It serves to support and protect the testes, and its pliability of structure allows their motion.

Besides being invested by the scrotum, each testis is furnished with its proper membranous coats, and with a muscle which is externally situated. This, termed the cremaster, originates from the obliquus internus abdominis, passes through the abdominal ring surrounding the vessels of the testicle, which, as we shall hereafter see, form the spermatic cord. It then continues on the outside of one of the coats of the testis (the tunica vaginalis, which also is connected round the cord some way up), and the muscle is ultimately lost upon this tunic, where it passes over the body of the testis. Its action is to draw up the testis, and by this means in coition it assists in the passage and expulsion of the fecundating fluid.

The membranous coats of the testicle are two, the tunica vaginalis and the tunica albuginea; to understand the manner in which they invest the testis, we must consider the circumstances under which that organ changes its seat, and passes from the abdomen into the scrotum.

In the early months of Utero-gestation, each testis is situated in the abdomen, beneath the kidneys, and like other abdominal viscera is covered by a reflection of the peritoneum, its position and appendages are the same as when in the scrotum, and the only difference in the anatomy of the parts is made by the presence of a ligament, termed the gubernaculum. This is connected above by a broad extremity to the testis, terminates in a narrow point at the inferior part of the scrotum, and is supposed to serve the purpose of a guide to the testis in its descent. About the seventh or eighth month the testicle begins to descend; as

it proceeds downwards it draws with it the peritoneum into the scrotum, first closely surrounding it, which now forms the albuginea, and continued upward from this is a loose reflection of the same membrane, which then obtains the name of tunica vaginalis. These then are the coverings of the testis, both productions of peritoneum; the first, tunica albuginea, of a white and shining appearance, externally smooth, and internally rough and cellular, where it is firmly attached to the body of the testis; reflected and continuing from the albuginea is the second coat or tunica vaginalis, loosely surrounding the testicle, except at the back part, where it proceeds from the former; from its being loose it leaves a small space of a pyramidal shape, which cavity at an early period, as might readily be conceived, communicates with the abdomen from this membrane being an elongation of the peritoneum which lines the latter. Soon after birth, however, the mouth of

it contracts, the communication is closed, and the upper part of the tunica vaginalis, which was connected to the peritoneum, and invested the spermatic cord, degenerates into cellular membrane, so that the cavity extends but a short distance above the testes. It happens sometimes that the cavity of the tunica vaginalis remains open for a number of years, and then usually the intestine descends into it, and constitutes what is termed hernia congenita. The outer surface of this membrane is rough, the inner smooth, and moistened by a vapour which proceeds from the exhalent arteries, and serves to prevent adhesion of the sides of the membrane. When this vapour becomes a fluid, and this from disease accumulates, it constitutes hydrocele, which is the effusion of a serous fluid between the tunica vaginalis, and the tunica albuginea. It must be remembered, that the testicle is not loose in the cavity of the tunica vaginalis, but

fixed at the posterior and inferior part of it, by the manner in which one tunic proceeds from the other. These coverings give defence and support to the testis, and the albuginea is a mean of connecting it to its appendix the epididymis; it also serves as a surface for the passage and ramification of the vessels, in the same manner as the mesentery conducts the vessels which pass to supply the intestinal canal.

Having thus explained the situation of the testicle, as invested by the scrotum and its proper membranes, we now arrive at the consideration of the organ itself. The testis is of an oval figure, of a yellowish colour; its texture is pulpy, and its size is commonly about that of a pigeon's egg; variety in this latter respect is however very frequent. In each testicle may be distinguished two extremities, one situated upwards and forwards, and the other downwards and backwards; two edges, one somewhat convex, which is

anterior and faces downward, and the other rather straight, which is posterior and faces upward, and two sides, one of which is placed outward and the other inward.

The testis, like all other emanatories, is chiefly composed of vessels which convey blood, and of those which perform the peculiar secretion. It has arteries then, and secretory tubes, which are called *tubuli seminiferi*: besides these of course it possesses veins, nerves, and absorbents.

The vessels which convey blood to the testes for their nourishment, and for the secretion of the seminal fluid, are the *arteriæ spermaticæ*, two in number, one to each testicle, which rises from the side of the aorta just below the going off of the renal arteries. It crosses the ureter and *psoas* muscle on the same side, and descends behind the peritonæum, to the upper opening of the abdomen, beneath the tendons of the *transversalis* and *internal oblique*

muscles, midway between the anterior superior spine of the ilium and the symphysis pubis; here it becomes connected to other parts by cellular membrane, and assists to form the spermatic cord, in which it proceeds beneath the tendon of the external oblique to the abdominal ring; at this place it forms an angle, and descends along the back part of the scrotum to the testis, which it enters at the posterior edge in the centre, and a little to the inside. As it proceeds it gives off branches to the parts by which it passes to the scrotum and epididymis, a body we shall presently notice. The spermatic artery follows a very serpentine course, and interlaces with its corresponding veins.

The length of the course of the spermatic artery will cease to excite particular attention when we recollect the original situation of the body it supplies: for we shall then find that the testes are, conformably to a known law of nature,

supplied with blood from the nearest source, and that the remoteness of this in after-life, arises from the change of situation which that body has undergone.

Besides the spermatic artery, a branch is sent off from the hypogastric, which also proceeds in the cord.

The spermatic arteries, by their extreme branches, have one termination in reflected veins, which then become collected into considerable trunks much larger than the artery, and those emerge from the posterior edge of the testis, and go to form part of the spermatic cord. As they ascend they form a considerable plexus round the artery, which, from an imagined resemblance to the shoots of a vine, has been called the corpus pampyniforme, or from its figure corpus pyramidale: they are also furnished with large and numerous valves; they enter the abdomen by the apertures through which the artery descended, and when they have arrived upon the psoas muscle form a single

trunk, which separating from the artery, on the right side pours the reflux blood into the inferior cava, and on the left side into the left renal vein. Corresponding to the artery from the hypogastric is a small vein which terminates in the hypogastric vein.

Having traced the course of that part of the blood which is concerned only with the nutrition of the testis, we come to the remainder of it, which is employed in the secretion of the seminal fluid, and which is poured from the extreme branches of the spermatic arteries into the tubuli seminiferi, upon which that function depends. These are of a delicate texture and white colour, and are divided into fasciculi by septæ, formed of cellular substance, and blood vessels dipping in between them; these septa proceed from a white line at the posterior part of the testis, which is named its nucleus, or from its being described by Highmore the corpus Highmorianum

thence they pass in a radiated direction, diverging from each other as they continue, and terminate on the opposite edge, leaving therefore between them a triangular space, which is occupied by the seminal tubes. These tubes appear to be cylindrical and form a number of convolutions, and when drawn out are found to be many yards in length. There is no apparent communication between them, nor is it possible to say where one begins or where it terminates; and hence some anatomists have conceived, that the testicle may consist of but one tube, formed into numerous and intricate convolutions. The fasciculi of the seminiferous tubes gradually diminish, till at last one duct may be distinguished, which, from its straight direction, is termed a *vas rectum*. These *vasa recta* are according to the number of fasciculi, usually from twelve to fifteen or twenty in number; and at the posterior part of the testis they unite, and communicating with each other form

a plexiform net-work, which is denominated the rete vasculosum testis. From this net-work proceed from twelve to eighteen other vessels, termed the vasa efferentia; these at the upper extremity of the testis again change their name, and becoming twisted and conical are called the coni vasculosi, which then go to form the appendix of the testicle, the epididymis. The epididymis, so named from its situation upon the didymi or testicles, is placed at the posterior edge of them, lying to the outer side of the parts where the vessels enter. From this circumstance a right and left testicle may be distinguished easily when out of the body, from the vessels being upon the inside of the epididymis; this was first noticed publicly by Winslow. It extends the whole length of the testis, and is connected to it by cellular membrane and vessels, and by being covered with the tunica albuginea. This connection is firmest in the centre, the extremities, and

especially the inferior, lying rather loose. The *coni vasculosi* pass to its upper extremity, and form this part rather larger than the rest of the body; whence it is named the *globus major* or head of the epididymis: the body of the epididymis is formed of one tube, convoluted upon itself, and these convolutions diminish as they proceed; at its inferior extremity the epididymis again becomes rather dilated, and this is therefore named its *globus minor*, or its *cauda*; after this the convolutions of the duct are much less intricate, it is larger, more distinct, and has received the appellation of the *vas deferens*.

The *vas deferens* issuing from the inferior extremity of the epididymis, immediately forms an acute angle, and turns upwards, running along the back part of that body to the entrance of the spermatic vessels, to which it becomes connected, and forms part of the spermatic cord. It ascends the scrotum in the cord, from the

other parts of which it may be readily distinguished by its hard and wiry feel, when examined externally. It is about the size of a crow-quill, but its canal is scarcely larger than sufficient to admit a bristle which disproportion arises from the thick and cartilaginous structure of the sides of the duct. Having entered the abdomen it quits the spermatic vessels, and passing under the peritoneum takes a course toward the bladder, approaching to its fellow at the inferior part of that organ between the entrance of the ureters: at this part it is a little enlarged. The vasa deferentia then pass upon the inside of the vesiculæ seminales, with which they communicate; and again contracting terminate in the urethra in common with the ducts of the vesiculæ, by the side of the veru montanum, or caput gallinaginis.

This then is the course of the semen being secreted from the extreme branches of the spermatic arteries, it passes into the

tubuli seminiferi, thence to the vasa recta, and through them to the rete testis; from this part it is conveyed by the vasa efferentia and coni vasculosi, to the head of the epididymis, and passing along the convolutions of the tube, by which that body is composed, arrives at the vas deferens: by that duct it proceeds to the urethra, whence being mixed, with the secretions of the vesiculæ seminales and prostate gland, it is expelled in coition, by the action of that canal, assisted by small moving powers situated near the part. From the immense length of this course, it is not to be conceived, that the motion of the seminal fluid can be influenced by the vis a tergo of the arteries, or that it can derive any great assistance from the contractions of the scrotum, or cremaster muscle: it is therefore far from improbable, that the seminiferous tubes have within themselves the principle of motion, which, though from their minuteness has escaped perception,

still is the only means by which reason can account for the passage of the fluid they contain. The testicles are largely supplied with nerves, which chiefly originate from the lumbar plexuses; hence we may comprehend why affections of this part are attended with so much pain, and we are enabled to account for the sympathy existing between and other organs. They also possess lymphatics, which issue from the posterior edge, and pass in the spermatic cord to the glands in the groin.

We sometimes, besides these vessels meet with what is termed a vas aberrans which is a seminiferous tube, deserting its usual course for a preternatural direction, and terminating in a blind extremity upon the outer part of the testis or in the spermatic cord.

We have now then seen the structure of the scrotum, composed of common integuments and cellular substance, and supplied with vessels and nerves;

have described the course of the testicle when it quits the abdomen, as well as the coverings of the tunica albuginea, and the tunica vaginalis, by which it is invested. The form and structure of the testis, its arteries, veins, and seminal tubes, and its appendix the epididymis, have been noticed and explained, as well as the other vessels which enter into their composition, and nothing now remains but to speak of the spermatic cord, in a more particular manner, to which, from its great practical importance, it is well entitled.

The spermatic cord is composed of the spermatic arteries and veins, of the nerves and lymphatics, and of the vas deferens, the excretory duct of the testicle; these are connected together by cellular membrane, and are invested in part by the tunica vaginalis, and by the cremaster muscle. The cord can be traced by the feel externally, proceeding from the posterior edge of the testicle, along the back

part of the scrotum, to the abdominal ring; after this dissection only can follow it, and we then find it passes beneath the tendon of the external oblique muscle, and enters the abdomen at the upper aperture, when the several parts separately pursue their individual course to those organs whence they originate, or to those appropriated for their termination.

CHAPTER II.

OF THE

NATURE OF HERNIA HUMORALIS.

WHEN a practitioner is called upon to treat disease, it is of the greatest consequence for him to know the exact nature of the morbid affection for which his assistance is required. This in many instances is difficult of ascertainment, for in numerous complaints, the opinions of authors are much at variance, both with regard to their nature, and to the treatment which may be indicated. This observation has till lately applied to that condition of the testicle, to which the term Hernia Humoralis has been given, and which the improved state of surgery has ascertained to be simple inflammation of that organ.

The older writers believed Hernia Humoralis, as well as Gonorrhœa, to be syphilitic diseases; and reasoning from the circumstance of its occurring most frequently after suppression of the gonorrhœal discharge, they conceived^d that there being no mode of evacuation for the poisonous humour, it fell upon the testis, producing the symptoms of syphilis. From this cause, and from an imaginary resemblance to Hernia, the complaint obtained the name of Hernia Humoralis. This opinion however is now no longer entertained because in the first place, the disease has sometimes occurred when the gonorrhœa discharge was most copious; because anatomy shews us no means by which such a poison could be conveyed from the one part to the other; and because, allowing such a mode of transmission to exist, and that the matter of gonorrhœa could be applied to the testis, it is not probable that it would induce any specific disease, or indeed any disease farth

than what must be the consequence of irritation, from the presence of an extraneous body.

When it was understood not to be a venereal complaint, some authors conceived it to depend upon distension of the part, which they asserted was thus produced:—That the gonorrhœal discharge being retro-pulsed from its original seat to the orifices of the excretory ducts of the testis, it irritated these glands, and caused an increased action of their vessels, followed by an increased secretion of the seminal fluid, which in consequence of the inflammation at the extremities of the vasa deferentia, could not be carried off; that it was therefore confined in the testis, and proved a source of continued irritation and inflammation. This however is by no means a rational explanation of this disease; increased secretion in every part of the body is as incompatible with action above, as it is with action below a certain degree: when the kidneys

are in an inflammatory state, the secretion of the urine is very considerably diminished; and when the vessels of the skin are in a state of high action, perspiration is always absent. Reasoning therefore from facts, it is not probable that any irritation sufficient to excite hernia humoralis, would be followed by an increased seminal secretion. Besides, those authors who advance this doctrine say, as a proof of it, that the venereal act relieves the disease: now if this be the case, it is an argument which at once shews the fallacy of their reasoning; for it evidently demonstrates, that the passages for the excretion of the seminal fluid are as much as ever in an open state. No doubt, had inflammation advanced to a great degree, these passages would have been obliterated: and this, from what we know of the pathology of membranous parts, is what we should expect; for in them adhesion, which obliterates the cavities that they line, is the very ultimate extent of

inflammation, and we know that hernia humoralis is not^{un}frequently coming on, when the inflammatory symptoms of gonorrhœa are so far abated, as to lead the surgeon to expect the speedy recovery of his patient. This explanation of hernia humoralis is therefore far from being calculated to satisfy the rational inquirer.

Several men of considerable eminence in the medical profession, are disposed to think that though hernia humoralis is not a venereal complaint, still it has something of a specific nature, by which it differs from common inflammation: but this is mere supposition unsupported by proof, for there is nothing in the symptoms of this complaint, nor any thing in the proper plan of treatment, which can justify our saying, this is specific inflammation. If their reason for such an assertion is, because it is most commonly complicated with gonorrhœa, they are evidently mistaken; because we know that many causes of simple irritation either applied

to the surrounding parts, or to the urethra, produce every symptom of this disease.

Another question has been agitated with respect to this disease, whether it is an inflammation of the epididymis, or of the body of the testis. In the first stage we can distinguish the epididymis to be affected; but it is absurd to suppose this can continue, even for a short time, without proceeding to the testis, which is immediately connected to it, while itself is participating in the affections of a part much more remote. Besides, occasionally the body of the testicle is primarily affected; and in all cases, daily observation proves that it very soon becomes involved in the inflammatory condition, which is first evinced in the epididymis, and that they form together one inflamed tumour to which our remedies are to be directed.

I conclude these observations with respect to the nature of swelled testicle, or *hernia humoralis*, by stating it to be com-

mon inflammation of that organ, possessing nothing of a specific or venereal character, and requiring that mode of treatment by which a phlogistic diathesis is to be subdued when taking place in other organs of the body.

CHAPTER III.

CAUSES OF HERNIA HUMORALIS.

HAVING ascertained the nature of the disease we are about to encounter, our next step is to attend to the causes by which it was induced; for knowledge of cause contributes to facilitate our acquaintance with effect, and tends to make our plan of treatment more distinct, and more efficacious, as we are then enabled to operate upon both at once.

With respect to those causes which may be said to predispose a person to hernia humoralis, they are, irritability of the constitution, either natural, or induced by means weakening the powers of the system. Preternatural irritability of the part is a predisposing cause of a swelled testicle; and this explains why a

person who has once been affected in this way is more liable to it at a future period, if labouring under gonorrhœa. The exciting causes are any circumstances which irritate the parts in the neighbourhood of testis, or which irritate the urethra: and here a number of proofs that this disease is by no means of a specific nature present themselves. It most commonly occurs when the gonorrhœal discharge is suppressed; but the suppression of this is not the cause of inflammation of the testicle, else hernia humoralis must occur after the cure of every gonorrhœa. It is caused by the circumstances which stop the discharge, as by injections of a powerful kind. It may be stopped too by a person's having been exposed to cold, by drinking or by violent exercise; and the way in which these causes operate is by increasing the inflammation; so that instead of the vessels relieving themselves by a mucous effusion, they pour out coagulable lymph, and ad-

hesion takes place; therefore, notwithstanding the running is less, the inflammation is greater, and the testicle is drawn into consent with the urethra, and also becomes inflamed. The use of bougies, either of the common or caustic kind, often excites this state of the testicle; the presence also of a stone at the neck of the bladder has proved an exciting cause. Injuries of the part have produced an inflammatory state of the testis, which I conceive equivalent to *hernia humoralis*, in short, any cause which, acting on another part of the body, is followed by inflammation, will produce the same effects when applied to the testis. Mr. Hunter imagined, that the inflammation produced in the testis by common causes, differed from that occurring under the existence of gonorrhœa; first, in being more permanent: but difference in the degree of disease does not necessarily infer a difference in the kind of disease; because, under peculiar circumstances, in-

flammation of a part is of longer or shorter duration, according to the extent to which it proceeds, and according to the habit in which it has been brought on, there is not the shadow of a reason to deny its being inflammation. They also differ, according to him, in having the disease in the part itself, that is, the testicle only is inflamed, and not the urethra: but I still maintain the disease to be the same, for the symptoms of hernia humoralis are all connected with the condition of the testes, and not of the urethra; and we direct our remedies, not to the canal, in order to cure a disease of the testis, but as much as possible to act upon that gland itself.

With respect to the mode in which irritating causes applied to the urethra produce hernia humoralis, some difference of opinion has been entertained. The opinion most generally received is, that the irritation is propagated from the urethra to the testis, along the vas de-

ferens, which opens into that canal. This appears plausible enough; but though we generally do find the vas deferens enlarged in hernia humoralis, appearing to corroborate this explanation, still considerable objections may be raised against it. If this took place, it is probable that both testicles would almost constantly inflame, which seldom happens; because from the proximity of the orifices of the vasa deferentia to each other, an irritating cause applied to the extremity of one, would affect the two; and they undoubtedly would be equally capable of propagating the irritation to their respective organs; nor is the thickening of the vas deferens always the primary symptom, the testis and the epididymis sometimes becoming first affected. Another reason why it would not seem to depend upon the actual propagation of the inflammation along these tubes is, that hernia humoralis sometimes comes on when the inflammatory symptoms of

the gonorrhœa are rapidly abating; and how could irritation proceed, so as to excite the violent effects of swelled testicle, when the part from which it must originate is in a quiescent state?

If one proximate cause of this complaint is overturned, it certainly would be proper to advance another in its place; but this is one unfortunate circumstance in our reasoning about disease, that though one doctrine is far from being satisfactory, we cannot always give an explanation likely to prove much more so. We should imagine that hernia humoralis depends upon that phenomenon of nature, which is termed metastasis of disease, its shifting from one part to another: how this can take place except by means of nervous communication, and why it should occur, are questions which pathological inquirers have not hitherto been able to answer.

CHAPTER IV.

SYMPTOMS AND CONSEQUENCES OF
HERNIA HUMORALIS.

INFLAMMATION of the testis, or hernia humoralis, occurs most commonly in one testis only; it has seldom been known to happen in both, though instances of this nature have been met with. Sometimes, when one testis is recovering the other becomes affected; and the diseases will sometimes alternate from one to the other, and this alternation be frequently repeated for a considerable length of time, attributable probably to what we have assigned as the proximate cause of the complaint, metastasis of the inflammation.

The symptoms of this complaint are of two descriptions, those which appear in

the part, and those which are shewing themselves in the constitution; which latter are considerable, though only sympathetic; for, from the sensibility of the testes, their importance to life, and their connexion with other organs of equal moment, the system will be found to sympathize very extensively with them, under any deviation from their natural and healthy condition.

Of the local symptoms, one of the first which apprises the patient of his complaint is pain. This, as might be imagined from the sensibility of the part, is very considerable, and is most probably occasioned by the distension of the blood-vessels, from an increased determination of the circulating fluid into them, and consequent pressure upon the nerves. Some have supposed it to depend upon the tunica albuginea being put upon the stretch: this may be the case when the swelling is considerable, but the pain which is present before the tumor arrives

to any size, cannot be so accounted for. This pain is not confined to the testis, but proceeds up the spermatic cord, and extends even to the loins; being conveyed along the course of the nerves, which proceed from the lumbar plexuses to supply the testis. Upon examining the part, a small swelling and hardness is distinguishable in the epididymis, which soon extends to the testicle, and one tumor is formed, which sometimes proceeds to a very considerable size. The veins of the spermatic cord will very generally be found in a varicose state, and the vas deferens is usually enlarged, and tender upon being touched: in a short time the coverings of the testis participate in the inflammation of that organ, and become thickened, so that it is difficult to distinguish the testis itself: latterly the integuments of the scrotum become also affected; being painful, hot, and red, shewing evident increase of vascular action; and this some-

times extends even to the integuments at the inferior parts of the abdomen. When complicated with gonorrhœa, the discharge sometimes ceases: this however is not always the case, for hernia humoralis has come on when the gonorrhœal excretion has suffered considerable aggravation. The tumor which is formed, is also a source of uneasiness to the patient from its weight.

The second class of symptoms, which are the constitutional effects of the irritation of the inflamed state of the testicle upon the system, are, first, general pyrexia. The pulse is quick and full, the skin is hot and dry, and the tongue and fauces are also dry and crusted: the patient complains of general uneasiness and want of rest. The bowels are very frequently attacked with colicky pains, and constipation is generally present. Sickness is not an uncommon attendant of this disease, as well as nausea, and loss of appetite, marking very clearly immediate

sympathy between the stomach and the testes.

When these symptoms subside, unless proper means of prevention are adopted, a hardness of the epididymis and testis may remain for some time, and in some persons continue through life, leading to a scirrhus state of that body, and frequently rendering its entire removal necessary. The formation of matter in the testis, has sometimes followed the symptoms of hernia humoralis, but this is of very rare occurrence.

Sometimes, and especially in scrophulous constitutions, when the swelling of the testicle subsides, it continues diminishing till the whole is absorbed. This is unattended with pain, and proceeds gradually, sometimes the testis being of a firm and hard, at other times of a soft and pulpy consistence. When one has been removed, we have great reason to apprehend the loss of the other. It would appear that the absorbents having been active in

removing the preturnatural deposit, and in reducing the testis to its natural size, have by this time, acquired from habit, an increased capacity and a morbid tendency to persevere in the action thus induced, and to carry away even those parts which are natural and healthy.

CHAPTER V.

ON THE TREATMENT OF HERNIA HUMORALIS AND ITS CONSEQUENCES.

AS the symptoms of hernia humoralis are of two orders, so the means by which we purpose the cure of this complaint must be directed to operate upon the system, as well as upon the parts affected, and will therefore admit of a similar distinction, into topical and general.

As the effects produced on the system are the most distressing, and as through it we can even operate most powerfully on the inflamed testicle, general remedies are the most important, and consequently entitled to our primary consideration. One of the principal indications in all inflammatory diseases is the evacuation of the blood-vessels; in conse-

quence of which depletion, they will not be stimulated to act with so much velocity and power as when distended by the circulating fluid. Bleeding, therefore, is an important step towards the cure of hernia humoralis, though not one generally pursued. The most usual practice is bleeding topically by leeches, a practice by no means attended with the benefit that follows the general emptying of the system, as will be more particularly noticed when we speak of their employment. By taking away a quantity of blood from the whole, we necessarily lessen the determination to a part; which, having once taken place from local causes is kept up by the irritation sympathetically propagated to the system; in consequence of which, every part of the circulation is thrown into a state of increased action. By evacuating the vessels generally we diminish this action, and remove the means that maintain the inflammatory state of the testis, much

more effectually than by abstracting a small quantity of blood from the part; which, even at the best, can only be a palliative remedy, as long as the vessels of the whole are labouring under inflammatory diathesis. The good effects of bleeding considerably depend upon the mode in which it is performed: if we make a small orifice and draw off the blood in a slow manner, the whole system does not suffer an immediate loss, and the vessels accommodate themselves to their contents almost in an equal proportion as those are diminished: therefore, though the actual quantity of blood is less, the vessels are equally distended, because they have contracted their diameter so, that their sides are still closely applied to the volume of blood circulating through them. If, however, we draw off a considerable quantity in a short period of time, nature cannot keep pace with the evacuation, and the vessels are in ~~reality~~ ^{a degree} emptied: their sides being now

but loosely
~~longer~~ in contact with the stream of blood, which is the natural stimulus requisite to induce them to act. In this way, therefore, their action may even be suspended for a time. Wanting the stimulus of distension, they will cease to contract and deliquium be induced; which, from its relaxing effects upon the muscular fibre, will be followed by much less powerful contractions of the heart and arteries, and will prove a considerable check to the progress of the inflammation. It is impossible to lay down any rule as to the precise quantity of blood which should be taken away, as it should always be proportioned to the circumstances of the disease, and the condition of the patient. The proportion should however be large, as by trifling evacuations we rather tend to keep up the fulness of the vessels. The system losing a quantity of blood, immediately sets about repairing it; and if small this will be speedily effected. If, however,

we take away a large quantity, it is beyond the power of nature to repair it in a short time, and in the interval, the vessels being less stimulated, contract with less frequency and force, and allow the part an opportunity of being restored to its natural and healthy state. Bleeding is also to be repeated as occasion may require; and the necessity of this repetition must be determined by the practitioner, according to the progress of the case. It sometimes occurs, that notwithstanding high local inflammation be present, the constitution of the patient will not bear any great loss of blood; and we must endeavour to diminish the action by other means. For inflamed parts have their sensibility increased; every time then that the blood passes through them under such circumstances, it proves a stimulus, which keeps up constant irritation, and perpetuates the disease: whatever diminishes the fulness of the vessels, and lessens the frequenc

of their action, removes a source of morbid irritation; and where bleeding is not admissible, which most effectually answers this indication, we must have recourse to the *tinctura digitalis*, from the exhibition of which, considerable benefit by its sedative operation upon the vascular system will be derived.

The next means of counteracting inflammatory action, is evacuating the system by increasing the intestinal excretion. By exciting this, we carry off the thinner parts of the blood, and so tend to empty the vessels; but the chief efficacy of this practice depends upon our deriving a quantity of blood from the parts inflamed; and establishing a state of increased action, in the course of the alimentary canal. The purgatives which operate in this way most effectually, and therefore more especially indicated in inflammatory diseases, are those of the drastic kind. But in the rational practice of medicine a general rule in every case

is not admissible ; and the circumstances which may modify it under particular diseases should always be taken into the account. This being done, we shall find that drastic purgatives are improper in hernia humoralis ; they increase very much the peristaltic action of the intestines, and affect particularly the larger ones ; and some of them more particularly operate upon the rectum. From the sympathy existing between this gut and the contiguous parts, the vesiculae seminales, vasa deferentia, &c. the irritation thus excited may be propagated to the testis, and aggravate its inflammatory condition. Thus the larger evacuations produced by these purgatives do not counterbalance their bad effects ; and therefore, though they are recommended by strong authorities, yet from reasoning, and, what is more important, from practical observations, we may conclude that they never ought to be employed in hernia humoralis. Those of the laxative

class are preferable, and of these the saline purgatives are the most beneficial, as possessing a sedative and cooling effect. In irritable constitutions it may be proper to employ the *oleum ricini*. From what has been said, it will appear that we do not wish to carry purging to any considerable extent, and two or three stools a day will generally be sufficient. We may also conclude, from the above observations, that in inflammation of the testis, calomel as a purgative, notwithstanding a different practice is generally adopted, is prejudicial from its drastic operation. Sometimes it is given joined with antimony, and then is less objectionable, but it is much better not to employ it at all. To give it as a mercurial, can answer no curative purpose, as there is no syphilitic action in the system to contend with; and indeed it is more likely to do harm when employed on this principle, for we know that mercury increases inflammatory action, whether general or

local by its rendering the system pretur-
naturally irritable, and susceptible of
the slightest exciting causes. It follows
therefore, that its use in *hernia humoralis*
will lead to an aggravation of the symp-
toms of that disease.

As one of the general symptoms of this
complaint is inflammatory constriction of
the vessels of the skin, and as, from the
extensive surface of that organ, the pro-
motion of its excretion is an effectual
mode of relieving the vessels generally,
we can easily comprehend why diaphore-
tics are of so much service in *hernia*
humoralis. Their employment, however,
has not been generally noticed, though
they tend very effectually to cure the
complaint. The warm bath, by relaxing
the cutaneous vessels is a very efficient
means of exciting perspiration; while,
by its possessing the same operation ge-
nerally, it lessens the tone of the vascu-
lar system, and renders the action of the
heart and arteries less powerful: it there-

fore should always be had recourse to when it is within the reach of the practitioner. Having induced perspiration by means of the warm bath, it may be maintained by antimonials; small doses of the pulvis antimonialis being given, especially if the symptoms are urgent, every four or six hours, and its operation will be more effectual, if a slight degree of nausea be produced.

Allied to the good effects of nauseating doses of antimonials, seems the operation of the same remedies when given so as to excite vomiting. The administration of emetics in this disease, is an old practice; and has, in some cases, been followed by instantaneous good effects. The rationale of their beneficial operation is not very apparent. Perhaps they act by deriving from the testis, and producing increased action in the vessels of the stomach. The antimonial emetics which are most proper, may also act by determining to the skin, and by causing

general relaxation: they, however, constitute a violent remedy, and the inflammatory state of the testicle may very generally be subdued without them.

Authors have very commonly recommended the use of Opium in swelled testicle, in order to allay the pain and irritation that attends it. But, in so doing, they have not considered the stimulating effects of this article on the system, which render its exhibition particularly improper in all cases of high active inflammation. The pain in such cases depends upon the increased action of the vessels; by opium we are tending at least in the first instance, to increase it still more, and are therefore aggravating not relieving this symptom. It therefore should by no means be employed as long as the heart and arteries are in a state of power and action above their natural standard. When, however, by antiphlogistic means this is in a great degree sub-

duced, and when the part remains painful only from the irritation of the effused lymph deposited in the course of the disease, then we may have recourse to opium, which will allay the irritation caused on the system, allow the patient rest, and shorten the continuance of the complaint. Large doses will be more efficacious than small ones, as they procure a sound sleep, by which the patient will be materially refreshed and relieved. The heat which opiates occasion on the skin may be obviated by conjoining them with ipecacuan. The pulv. dover. therefore may be given in the latter stage of hernia humoralis, and will answer the double purpose of allaying irritation, and maintaining a due excretion of the perspirable matter: thereby counteracting any tendency in the vessels to be again preternaturally distended. During the administration of opiates we should guard against constipation, because a suppression of the alvine discharge would con-

tribute to induce a return of that distended state of the vascular system which we have laboured to avoid, and to which the vessels may now have contracted a tendency from the force of habit. The neutral salts, or *oleum ricini*, in moderate doses, should be occasionally given so as to keep the bowels in a soluble state.

This then is the practice to be adopted during the inflammation of the testis. If it run high, bleed: never employ drastic purgatives, but be content with keeping the bowels open, and maintain a determination to the skin. Mercury and emetics are not to be used, nor even opium till the inflammation has subsided. To the other general means of cure, rest, the avoiding of irritating causes, as cold, emotions of the mind, &c. and the antiphlogistic regimen are to be super-added.

We are now then to consider the remedies that act upon the part itself, of

which we have considerable variety, and which are by no means to be neglected, because by abating the local inflammation they not only relieve the testis, but lessen the irritation which is occasioned by it upon the system.

The abstraction of blood topically is usually preferred to taking it away by the arm, and leeches are strongly recommended for this purpose. They have, however, when employed in the course of my practice, been by no means attended with such striking efficacy as has been stated; they have produced a temporary suspension of the pain and inflammation, but these have always recurred with as much, if not more violence, than before; and this has occurred even when their application has been frequently repeated. The necessary exposure too of the patient to the cold in order to apply them, subjects him to a risk of receiving more harm than will be counterbalanced by the loss of blood which the leeches occasion.

When it therefore is resolved to draw blood topically, a number of scarifications made upon the scrotum with a lancet, and the promotion of the bleeding by the subsequent exhibition of warmth, will be much more beneficial than the employment of leeches.

A number of applications have been recommended with a view principally to two effects, either the abstraction or increase of heat; and considerable difference prevails in practice with respect to which is most proper in cases of *hernia humoralis*, and much uncertainty has been occasioned by the advantages exclusively ascribed to each in the accounts of the favourers of the one or the other. But repeated trials have convinced me that the most successful plan is to employ both, each possessing peculiar advantages in different stages of the complaint. When the inflammation is coming on, and before it has arrived to any considerable height, by employing cold you

constrict the vessels of the scrotum, in consequence of which it contracts upon the testis, and by keeping up a moderate degree of pressure on that organ prevents its vessels from becoming too readily distended. Allowing this to be its operation, which it most probably is, we may understand why, at the height of the inflammation, cold ought not to be employed : because from its causing pressure upon a part already distended, and morbidly sensible, it will excite considerable pain, as well as from differing so materially from the temperature of the inflamed parts, and abstracting a quantity of heat in too sudden a manner. It may also increase the inflammation internally by checking the flow of blood to the surface, in consequence of its occasioning constriction of the superficial vessels of the scrotum. Though improper at this period we may afterwards have recourse to the exhibition of cold when the inflammation is abating, for then it forms a natural

bandage for the testis of the scrotum, which, contracting and pressing on it, supports its vessels relaxed by the previous distension, and also excites the absorbents to take up the coagulable lymph which has been effused. When, therefore, the incipient or declining state of the inflammation indicate those means which abstract the heat, and are attended with a sense of cold, we may employ a mixture of spirit and water, or vinegar and water in equal parts; we may use the aq. ammon. acet. with or without a quantity of spirit, or what form as good applications as any, the solutions of lead, the aq. lythargy. acet. &c.

While the inflammation is considerable we are indicated to apply warmth to determine a quantity of blood to the surface, and to relax the scrotum, so that it may not afford too much mechanical resistance to the distension of the testis.—If, however, the warmth applied be much above the temperature of the inflamed

parts, it acts as a stimulus, and occasions pain by its supplying a fresh stock of the matter of heat to parts, whose temperature is already preternaturally increased. Applications, therefore, which maintain a moisture on the surface of the scrotum, are preferable. An oatmeal poultice with vinegar, applied moderately warm, will answer this indication, but is inconvenient from the necessity of changing it so often, and every time exposing the patient to the cold of the atmosphere. I therefore prefer a vegetable ointment, which produces a slight inflammation on the skin, and which, spread on flannel, being previously moderately warm, may be applied once in twelve hours with considerable benefit.

℞ Adip. Suill.

Porr. comminut āā ʒij.

Misce dein simul liquefactis cola.

With respect to restoring the gonorrhœal discharge, when hernia humoralis follows its suppression, we know that such

a practice has frequently been attended with instantaneous relief, and therefore, as far as the applications of fomentations or poultices to the neighbourhood of the urethra are likely to effect this, they are vindicable; but it is a very injudicious plan to apply any irritation to the urethra itself, as the introduction of a bougie, since this is most likely to aggravate the inflammation of the testis from the sympathy subsisting between these parts.

The only thing that remains is to state, that the body should be kept in an horizontal posture, in order to facilitate the return of blood by the veins, and the scrotum should from the first be supported by a bag truss *, which should be conti-

* As the truss generally employed is not adequate to this from its being so readily displaced, the author contrived a bandage which should not be liable to the same defect, and would therefore give constant support to the scrotum. For a plate and explanation of which, see Dr. Bradley's Medical Journal, for April 1804.

nued some time after the cure, in order to guard against a recurrence of the inflammation.

We have observed that sometimes, when the inflammatory state of the testis is subdued, that a swelling and hardness in the epididymis, and occasionally in the body of the testis, remains for a considerable time from the coagulable lymph which has been deposited not being absorbed. To excite the absorbents a great variety of applications have been recommended, as blisters, stimulating ointments, as one composed of emetic tartar; plasters, as the soap cerate plaster, &c. Electricity has often been tried, though like the former means with very little success. Purgings, mercury and emetics, are the medicines to act generally on this stage of the disease, but the latter properly managed will almost constantly remove it. All kinds of emetics are not however equally proper, and those best adapted to the inflammatory stage,

from their nauseating and relaxing effects, should never be employed in this. The disease seems to depend upon a want of power in the absorbents, whose muscular coat perhaps has been weakened by the preceding inflammation, and we might as well attempt to restore the tone of a muscle which has been put upon the stretch, by reducing the strength of the system, as to promote the action of the absorbents when weakened from a similar circumstance, by giving relaxing emetics. The object is to give tone to them, and enable them to perform their functions, when they will remove the deposit in hernia humoralis upon the same principle, that steel medicines have cured an hydrocele in its incipient state: As vomiting particularly excites absorption, it should certainly be induced, though at the same time, as we do not wish to debilitate, and rather to strengthen the system, it should be so by the class of tonic emetics, as white vitriol, &c. By giving this once.

or twice a week, supporting the constitution by tonic medicines, by the application of the vegetable ointment noticed above with equal parts of the weak mercurial ointment, and a fourth of camphor; and by the patient, especially if of a scrofulous diathesis, going occasionally into the tepid salt-water bath, you will very generally succeed in restoring the testis and epididymis to their natural state, where they had been long swelled and hard, and had resisted every other plan of treatment.

With respect to the wasting of the testicle, various means of cure have been followed without much success, the organ almost always being completely absorbed. Mr. Bell mentions a case which was cured by the application of a blister: and in one instance under my own care, when every remedy had failed, and the testis, though hard, was rapidly wasting, a number of scarifications on the scrotum and the immediate exhibition of a blister

also succeeded in stopping the disease, and preserving the testicle. Why it should do so I am unable to explain, nor have I seen a sufficient number of cases to decide whether this practice would be equally successful in all, though from its efficacy in these two instances, I think it well worth the trial.

This then terminates these observations on hernia humoralis, which have not so much tended to promulgate any plan of cure unknown before, as to place the present practice upon the footing of reason, and to reconcile and explain the differences of authors respecting some topics relating to it: at the same time no theory has been advanced as the groundwork of any particular treatment; it has on the contrary all along been deduced from long and attentive observation of the phenomena of the complaint and the operation of those remedies by which it is relieved. And the author closes this treatise with the hope that it may

prove of some service, at least to the unexperienced in the profession, by affording them, as it were, landmarks, to direct their course, and pointing out to them those principles which alone can form the basis of a judicious and successful practice.

REMARKS

ON

OPACITY OF THE CORNEA



HAVING, for some time past, both in public and private practice, had many cases of Opacity of the Cornea under my care, and having met with considerable success in the treatment of a complaint that has hitherto baffled in a great degree the endeavours of the profession, I conceive it my duty to state to the public the means by which such success has been obtained, that others may profit by the experience which I have derived from accidental circumstances.

By Opacity of the Cornea, we mean the loss of transparency in that part,

the cellular membrane which covers it, or in the tunica conjunctiva: in consequence of which, the rays of light, according to the extent of the disease, are more or less obstructed in their passage to the retina, and external objects more or less obscured to the eye.

This complaint usually occurs after the existence of inflammation in the tunica conjunctiva; whether this be excited by external causes, or connected with a syphilitic or scrophulous action in the system, or depend upon the presence of the variolous infection: although, however, these vary in their nature, and require a plan of treatment in several respects peculiarly adapted to themselves, yet the mode in which they occasion opacity is the same. In the course of the inflammatory stage coagulable lymph is effused, which not being absorbed after the inflammation has subsided, agglutinates the layers of the cornea or conjunctiva, or induces adhesion in the cells

of the membrane which connects them, and occasions such a thickening in the parts, as completely to destroy the power of transmitting the rays of light.

When opacity begins to take place, proceeds with greater or less rapidity according to the degree of inflammation which preceded it: if that was of the active kind, the opacity quickly extends; if it was more of a chronic nature, the complaint comes on in a slow and gradual manner.

The opaque white appearance which the eye presents in this disease, is sometimes confined to a single point, at other times it seems to involve a large portion of the cornea, and occasionally is distinguishable in several distinct and separate specks. According to the situation of the opacity will be its effects upon vision; for however small and circumscribed in size, if it be situated over the pupil, must necessarily impede the sight much more than when it is placed on an

ther part of the cornea. From the little inconvenience indeed, that results from the presence of such a speck on a part of the cornea which does not interfere with the pupil, it is generally thought unworthy of notice: this however, is a very serious mistake, for when once the disease commences, it almost always continues to increase; and therefore, although the appearance of it may be inconsiderable, yet we should, as soon as possible, employ every means in our power, not merely to check its progress, but to remove it altogether.

Although upon first inspection the opacity seems to have taken place in one indiscriminate mass, yet minute examination confirms what reasoning a priori would lead us to suppose, that the disease occurs in different parts; these then are three in number: it is sometimes situated between the layers of the cornea, at other times in the tunica conjunctiva, but more commonly the lymph will be found ef-

fused into the fine cellular membrane that connects these two together. However delicate this membrane may be, yet, from its cellular structure, it must allow of effusion more readily than can be done by the cornea, or conjunctiva, from the greater compactness: besides, through pass the vessels that supply the latter, and, even supposing these only dilated they will prove a sufficient obstacle to prevent the passage of the light. Another reason why we may conclude that this is the most usual seat of the disease may be drawn from the result of opacity; for were effusion to any extent to take place between the lamina of the cornea or in the conjunctiva, it would necessarily occasion the disorganization of those parts, and would probably be followed by a sloughing, which seldom happens: allowing this would not always occur, still as their texture, and particularly that of the cornea, would be destroyed, the cases must be incurable; for

we know no means by which an injury done to the internal structure of parts, can be artificially repaired.

That opacity does occur occasionally both in the cornea or conjunctiva, examination will prove, and in ascertaining it by this means, the observer should take a lateral view of the eye with considerable attention. If the disease be situated in the conjunctiva, or in the cellular membrane, he will be able to distinguish it by looking from behind the cornea: if it be seated in that part, then he will be able to observe the transparency of the conjunctiva and cellular substance, by discerning through them the anterior layer of the cornea.

In the treatment of this complaint, whether it be or be not complicated with any constitutional affection, the chief indication is to procure the absorption of the effused lymph, which agglutinates the parts where it is deposited, and occasions opacity; as it would seem to depend

upon a loss of balance between the arteries and absorbents, the former depositing more than the latter can remove, we are to endeavour to place their action on level, by increasing that of the one and reducing that of the other. From our being able to operate more directly on the arteries, the chief means of effecting this will be by diminishing their contents, so that the effusion shall not proceed: and the absorbents will have an opportunity of carrying away what has previously been poured out; topical bleeding, therefore, is the remedy on which we are chiefly to depend for the cure of every case of opacity. In performing this, we are not to bleed, as is usually the custom, by puncturing the vessels of the conjunctiva, but by free longitudinal incisions upon the inside of each eyelid, below the inferior and above the superior tarsus: this place is preferable, because here we avoid wounding the ciliary glands, and at the same time bleed to a greater extent.

from the conjunctiva being more vascular at this than at any other part. It is necessary to attend particularly to the manner in which we operate, as on this greatly depends the success of the practice. If we content ourselves with such trifling incisions as are usually made, we are rather doing harm than good, for little or no blood is abstracted, and the wound is a cause of irritation which tends to aggravate the complaint; and if we do not choose the situation pointed out above we are making scarifications upon the tarsi themselves.

Besides bleeding topically we should in those cases of opacity which are supervening upon active inflammation of the eye employ stimulating applications, for these by increasing exhalation from the surface of the conjunctiva are assisting to evacuate the vessels, and to reduce them to a balance with the action of the absorbents. The applications however, that most effectually answer this purpose,

are those which unite a stimulating and astringent operation, for then they also contract the diameter of the vessels, and diminish in this way the supply of blood to the lymph that has been effused. No one application should be too long persevered in, for the part becomes gradually at last habituated to the impression which it makes till at last its exhibition is altogether ineffectual. The great art therefore in the successful use of these remedies is a judicious variation of them, changing each one as its efficacy declines, and employing a fresh preparation by which the stimulating and astringent effects are never suffered to be effaced, and the chief object of the medicine is steadily maintained. For this purpose we may employ a variety of compositions. One is formed of vitriol. alb. and gum camph. $\bar{a}\bar{a}$ gr. x. sp. vin. r. gtt. xv. tinct. opii. $\bar{3}j$. and aq. pur. $\bar{3}viij$. Another is composed of aq. calcis $\bar{3}v$. and calom. $\bar{3}ij$. Other useful applications

are solutions of corrosive sublimate gr. iij. to aq. pur. ℥ij. with tinct. thebaic. ʒij. of lunar caustic gr. iij. aq. pur. ℥ij. or a lotion consisting of aq. cup. ammon. gtt. xx. and aq. rosæ ʒiv. Cloths should be kept wet with one or other of these, and constantly applied to the eye. With a view to produce a more powerful effect we may employ occasionally these articles in a more concentrated state, introducing them from time to time between the palpebræ by means of a hair pencil, and applying them to the eye itself. The proportions in which the above articles are to be used when we have this object in view will be as follows: Hydrar. mur. grj. tinct. thebaic. ʒj. aq. pur. ʒss. Argent. nitrat. grj. aq. pur. ʒj. --- And aq. cup. ammon. gtt. xv. to ʒj. aq. ros. With respect to general remedies very little is necessary in opacity from common inflammation, the bowels should be kept in a lax state, and by purgatives rather of an active nature; the pill I gene-

rally use is composed of cal. gr. iij. pil. rufi. gr. xv. and pulv. antim. grj. which are made into 4 pills, and these may be taken every other day; and I give also as an alterative, a pill of calom. gr. ss. and emetic tartar one-eighth of a grain, every night.

When opacity arises from a chronic or scrophulous inflammation of the eye, we should have recourse to the same topical means of cure. We are however to attend more to the state of the system, which requires to be supported by medicines of a tonic nature. By giving preparations of steel with myrrh, in these cases, you invigorate the constitution, restore the vessels to their healthy condition, and consequently enable the arteries to recover from their atonic state, as well as empower the absorbents to carry away the matter that has been effused.

While we know that there is a syphilitic action in the system it will be of little use to treat the opacity locally, if we omit administering mercury which should

be employed both generally and topically. By giving it internally we succeed better than if we introduce it by friction, and corrosive sublimate appears to have a very remarkable effect in procuring the absorption of the lymph, and is therefore better adapted to the complaint than any other form of the remedy. At the same time, as this is an uncertain medicine, we are not to trust to it alone, but when the opacity is nearly absorbed the cure should be completed by mercury in a different form, as the pil. hydrar. or any preparation on which we can rely. As well as bleeding topically the corrosive sublimate with the tinct. terebaic. in this case forms a most excellent application to the eye itself.

The opacity that follows small pox is to be considered as the result of active inflammation occurring in the eye, and therefore requires no deviation from the plan of treatment we have laid down, as always necessary, under circumstances of this description.

CASE I.

PATRICK HILL, a boy of five years of age, became a patient of the Eastern Dispensary, in March, 1805, by the recommendation of Mr. Parker, for a violent ophthalmia in consequence of some lime being thrown into his left eye; from the fulness of his habit of body the inflammation had proceeded to an alarming extent, so that when I saw him a week after the accident, the palpebræ were swoln and inflamed, the vessels of the injured eye were considerably turgid with red blood, and an extensive opacity was covering the whole of the pupil, every appearance threatening a complete loss of vision. The other eye was also inflamed, and there was a slight degree of general fever. By forcibly opening the eye I could observe that no particles of

lime were remaining, but still there was no possibility of introducing a scalpel to evacuate the vessels topically, and for the first week the general means of obviating inflammation were principally used. He was purged briskly by means of a strong cathartic every morning. His head was next shaved, and a large blister was applied over the whole of it. Pledgets dipt with the following lotion were kept constantly applied to the eye. Zinc. vitr. gr. x.---tinct. thebaic. ʒj. and aq. pur. ℥j.---By the second week the inflammation was considerably abated, and the exhibition of the active purgatives was no longer indicated. As it still ran high, however, it was necessary for a fortnight to keep up a slight determination to the surface by antimonial medicines; and his bowels were kept open by the magnes. vitriol. ʒiij. every morning. Scarifications were now began and continued every morning, and the bleeding was promoted by warm water. At night a few drops of a solution of hydrar. mur. grj. to ʒj. of

water, and tinct. thebaic. ʒj. were introduced into the eye, and the collyrium mentioned above was at other times applied, its strength being increased, the zinc. vitriol to ʒj. and the tinct. thebaic. to ʒij. The boy becoming debilitated at the end of three weeks from the preceding evacuations, it was found necessary to put him on the use of tonic remedies, particularly steel and Bitters: the bowels at the same time being kept open by occasional laxatives. After five weeks the scarifications were employed but once a week, and no application used but the solution of argentum nitratum dropped at night into the eye. At the close of a few weeks his sight was by this treatment restored, a loss of which at his early time of life would have been a misfortune to him of the most serious nature.

Note. This boy was first under the care of an eminent oculist, who on examining the case declared, that the sight of the eye was inevitably lost, and that nothing could be done for its relief.

CASE II.

A YOUNG Gentleman, eight years of age, was placed under my care by his parents, in August last, for opacity, that partially covered the centre of the pupil in both eyes, which though not rendering him completely blind yet so far impeded his vision as to prevent his discerning objects distinctly. This opacity had followed a violent inflammation in his eyes, and had been present for two years, having resisted various plans of treatment; there were also ulcerations on the edges of the tarsi; from his constitution being extremely delicate, it was requisite to give the system support in order to enable its vessels to take on an healthy action, and with this view he was put on a tonic plan, consisting principally of steel and aromatics. With respect to the topical treatment, the eyelids were scarified once a week for the

first month, using frequently the following collyrium. Zinc. vitr. ʒj. g. camph. gr. xx. tinct. opii. ʒij. and aq. pur. ℥ss. After this period the vision being amended it was judged no longer necessary to scarify the palpebræ, and the solution of argent. nitrat. mentioned in the preceding case was substituted for it. The sight continued improving slowly for three months, and was then perfectly re-established.

CASE III.

ELIZABETH W——, aged 39, was recommended to the Eastern Dispensary, by Mr. Ferris, in the commencement of last June, for an opacity of the cornea in the right eye. This had existed for three years, being the consequence of a violent ophthalmia, and covered the whole of the pupil, so that no objects could be distinguished. Being of a plethoric habit it was found necessary to maintain a determination to the skin, and also to keep the bowels in an active state, and these objects were effected by the usual antimonial preparations every night, and by a brisk cathartic every morning. The local treatment included scarifications of the palpebræ also every morning, and a lotion constantly applied to the eye, consisting of hydrar. mur. gr. vj. tinct. thebaic. ʒj.

and aq. pur. ℥ij. The sight being in some degree recovered at the expiration of a fortnight, the use of scarifications and the lotion was desisted from, and in their place were employed a solution of the argentum nitratum, of which a few drops were every morning insinuated into the eye, and a collyrium afterwards used, and composed of aq. calcis. ℥viij. cal. ppt. ʒij. with which the eye was frequently washed. By persevering in this plan for six weeks, the opacity was removed, and the sight of the patient restored.

CASE IV.

MRS. N——, in May last was attacked with a violent inflammation in both eyes, with an excruciating pain and much uneasiness in the head, for which she had been taking various remedies for the space of seven months previous to her making application to me. Temporary relief was procured by the medicines she had been taking, but without any permanent benefit, the disease was making a rapid progress and producing a partial opacity of the cornea of both eyes. In the course of two months I was so happy as to remove entirely the opacity of one eye, and the other was rapidly diminishing; so that even with the worst she could readily discover objects.

The means I employed on the present occasion, at the commencement of the case, were such as I pointed out in the preceding Treatise, conceiving in the

first instance that it was connected with a syphilitic affection, I immediately put the patient under the medicines suited to that disease. It is well known that any course of medicine of this kind will not have an effect upon the opacity without the local active means so much insisted on in this complaint. Large scarifications were made on the inside of each inferior eyelid, as the first step towards the cure. These were repeated regularly every morning, so as to draw blood freely from the part in a larger quantity than is usual. In conjunction with the scarifications, pledgets dipped in the following lotion were kept constantly applied to the eye.

R

Hydrar. mur. gr. vj.

Tinct. opii. ʒj.

Camph. ʒj.

Aq. rosæ ℥ij. ft. lotio.

In a short time after the preceding inflammation, the following drops were

used in addition to the above plan every night.

R

Argent. nitrat. grj.

Aq. pur. ℥j. m. ft. solutio.

A few of these drops, about five or six, were applied to the opacities on the cornea by means of a hair pencil every evening. This plan was regularly continued with the above patient for the period mentioned, and the good effects of it have been stated above.

CASE V.

WILLIAM B——, of the age of 24, and of a full plethoric habit, applied to me last summer for the cure of an opacity of the cornea which was present in each eye. The specks however not completely covering the pupils, he was able to go about, and to distinguish objects of magnitude from one another, though unable to discern any thing minute or indistinct. The vessels of the eyes were not at all distended with blood. The account he gave of his case was that the complaint had ensued upon the termination of a violent ophthalmia, and had at this time remained unrelieved by any plan of treatment for nine or ten years. For the first three or four weeks he was purged twice a week with brisk cathartics. Blisters were applied behind his ears, and kept open nearly three

whole of that period, and the scarifications were made on the inside of the inferior tarsi every morning, promoting as usual the evacuation by the application of warm water. Besides these means the lotion of calomel and lime water was kept constantly applied to his eyes. About this period as he began to distinguish lesser objects, such as large letters, the scarifications and purgatives were now desisted from, and the blisters suffered to heal. The plan next adopted was to keep up a slight general evacuation by a powder of calomel and antimony taken every night at bed-time; the lotion was still continued, and a few drops of the solution of argenti nitratum I have before noticed were introduced every night into his eyes. Under this treatment the specks gradually diminished, and at about the expiration of ten weeks the opacity in the left eye was completely removed. In about a

week or ten days afterwards, the vision of the right eye was also restored, and he was then able to distinguish the most minute objects with ease, so as to read the smallest print without difficulty or hesitation.

CASE VI.

A LADY of about the age of 40, and of a delicate constitution, was recommended to me in the beginning of last year for an opacity in the right eye. This had been coming on in a most gradual manner for a year and a half, and she was unable to assign any cause for the attack. The speck was thin, and covering nearly the whole of the cornea. She could distinguish objects, but from the intervention of the speck they always appeared enveloped in a mist. From there being an evident want of power in the system, the plan of general evacuation was strongly counterindicated, and it was necessary to give support to the constitution, that the absorbents might have tone sufficient to fulfil their functions, and remove the effused lymph. With this view tonics, and principally the preparations of steel

were administered. To stimulate the absorbents locally, scarifications were judged proper, but these were slight, and repeated but three times a week. A lotion containing vitriolated zinc and tincture of opii. was kept constantly applied to the eye. The propriety of this treatment was evidenced by its success, for in proportion as she gained strength, the opaque film was absorbed. At the expiration of three weeks the scarifications were laid aside, and the drops of the caustic solution were had recourse to. The eye gradually recovered a clear and distinct vision, and at the termination of about two months was restored to its natural and healthy condition.

CASE VII.

CHARLES H——, 36 years of age, and by profession an optician, was recommended to the Eastern Dispensary, by Mr. Davis, in December last, for an opacity in the cornea of each eye, attended with inflammation of both eyes, which had been occasioned by the nature of his employment, and had preceded the opacity now present. At the time I saw him the complaint had existed for about five months. The inflammation being now of a chronic kind it was necessary to apply a degree of stimulus to the eye, and this was accordingly done by the use of an ointment containing precip. rub. \mathfrak{z} j. ung. hydrar. f. \mathfrak{z} ij. ung. alb. cam. \mathfrak{z} ss. which he introduced every night between the eyelids. To obviate general distension he took a powder of calomel grj. pulv. antim. gr. ij. also every night, while to

diminish the local plethora and to induce the absorbents to act upon the effused lymph scarifications were made twice a week in the manner which I have described. The bleeding was as usual promoted by warm water, and the lotion of white vitrol, tincture of opium and water, of which I have already frequently spoken, was applied constantly to the eye. At the end of a week a blister was applied to the back of the neck, and the ophthalmia after this very rapidly abated. This plan was persevered in till the middle of January, when the patient was so much recovered as to find no inconvenience that could possibly retard him from the recommencement of his professional pursuits.

CASE VIII.

SUCH has been the similarity of plan pursued in the treatment of the various cases I have met with, and of so analogous a description are the generality of these cases that it would be but uselessly augmenting the size of this small volume to enter into a detail of any considerable number out of those which my practice has afforded me. With the next case, therefore, I shall conclude these remarks, trusting that the benefit resulting from the treatment inculcated is sufficiently obvious to justify its adoption by other practitioners.

JOSEPH B——, aged 6 years, was submitted to my care by his friends, in January last, for an ophthalmia tarsi accompanied with a speck upon the cornea of each eye. The complaint had followed a fever by which he had been attacked about 2 years before, and in this period a number of measures had been taken for its removal, but to very

little purpose. A scrophulous diathesis was very evidently marked; and the first steps that were taken in addition to the usual plan of scarifying and to the lotion of vitriolated zinc. were to keep his bowels open by a powder, consisting of the pulv. rhœi. gr. x. and calom. ppt. gr. ij. which was taken twice the first week. After this however, in order to support the general strength, the steel and Myrrh pills were administered, attending to the complaint topically by scarifying the eyelids twice a week, using constantly the above lotion, and by anointing the lids every night with the following stimulating ointment, precip. rub. ℥j. ung. hydrar. nitr. ʒij. ung. alb. camph. ʒss. By a due attention to this plan the desired benefit was procured, the chronic inflammation subsiding, and the specks being at the termination of six weeks entirely absorbed.

FINIS.

